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Melanoma Before and After Thomas B. Fitzpatrick

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At the time of Dr Fitzpatrick's entrance into the field of dermatology, melanoma was a rare tumor. From his interest in the basic biology of the pigment cell he turned to the malignant melanocyte for study. Initially the cell line of origin of melanoma was unclear. Melanoma was recognized usually in an advanced form, treated by surgeons and evaluated histopathologically by pathologists. It was most often fatal to the patient. The subtypes of melanoma were undefined. Surgery of the tumor was often radical, with as much as hemipelvectomies being performed for primary melanomas on the lower extremities. Prognostic factors were unclear and sunlight was not fully implicated in the etiology.

The earliest contribution of Dr Fitzpatrick was the description of the clinical features of melanoma in the book *Tumors of the Skin* (Fitzpatrick and Clark, 1963). His interest in melanoma led to the recruitment of Dr Wallace H. Clark, Jr to the Massachusetts General Hospital. Dr Clark had a basic interest in melanocyte biology and melanoma. From this collaboration, the first pigmented lesion clinic (PLC) in the United States was established with Drs Fitzpatrick, Wallace H. Clark, Jr, John Raker, and Martin C. Mihm, Jr. The clinic began meeting regularly on the first of April, 1966 and patients were readily recruited to this clinic. From studies of primary tumors over these years, the classification of melanoma was developed and published in 1969 (Clark *et al*, 1969). The appreciation of the unique diagnostic features of melanoma was a result of the combined observations of the members of the PLC and led to the publication of an atlas of clinical diagnosis of early melanoma, the first such publication in color in the *New England Journal of Medicine* (Mihm *et al*, 1973). That publication was reprinted by the American Cancer Society and widely distributed in the United States to practicing physicians.

An outgrowth of the PLC was the formation in 1972 of the Melanoma Clinical Cooperative Group (MCCG), supported by funds derived from President Nixon's "war on cancer". This group, conceptually formulated by Dr Fitzpatrick, included Dr Alfred W. Kopf and others at New York University, Dr Wallace H. Clark, Jr, who had by then moved to Temple University, and Dr M. Scott Blois, at the University of California at San Francisco. The goal of the MCCG was to study the natural history of cutaneous melanoma and elucidate its clinical and prognostic factors. It was the first NIH funded cooperative group studying a single cancer, which was, in addition, not conducting therapeutic trials. Dr Arthur J. Sober joined the group in 1973 and went on to become the coordinator of the study. The publications that were forthcoming from the MCCG included one of the first series of prognostic studies of melanoma employing multivariant analysis, which resulted in a clearer understanding of the prognosis in patients with this disease (Day *et al*, 1982a; Day *et al*, 1982b; Day *et al*, 1982c). Drs Ronald Malt and Calvin Day, utilizing the patient experience from the MCCG, published one of the first editorials recommending narrower margins for melanoma in the *New England Journal of Medicine* in 1982 (Day *et al*, 1982d). The PLC indeed became a model for multidisciplinary approaches to this disease, and has now been replicated throughout the world.

One of the special interests of Dr Fitzpatrick was the role of sunlight in the etiology of malignant melanoma. He described the Fitzpatrick skin phototypes, which have proved to this day very helpful in classifying individuals and their sensitivity to the sun. Through his efforts and those of Dr Madhu A. Pathak and others, the first sunscreens were tested and developed for use among the public in the 1980s. From the data accumulated in the PLC files, Dr Robert Lew published in 1983 a paper documenting the association of blistering sunburns and increased risk of melanoma development (Lew *et al*, 1983). These observations, along with the rarity of melanoma in non-sun-exposed areas of the skin, were useful in helping to ban supersonic transport flights in the United States (Environmental Impact of Stratospheric Flight, 1975). Dr Fitzpatrick not only published on this issue, but also appeared before a congressional panel supporting the restriction of SST flight to protect the ozone layer (Statement of Thomas B. Fitzpatrick, 1975). Similar data were used to support the removal of ozone depleting CFCs from aerosol sprays and automobile radiators in reports by the National Academy of Science (Fitzpatrick and Sober, 1979).

It is clear that although Dr Fitzpatrick entered the scene of melanoma biology at the time when the tumor was of unclear etiology, highly lethal and also treated by radical approaches, by the end of his career his contributions furthered the early recognition of melanoma and its precursors, helped establish sunlight as a factor in etiology and also elucidated predictive factors to determine patient outcome. He was also instrumental in training a generation of melanoma investigators who continue his work, including Dr Martin C. Mihm, Jr, Dr Calvin Day, Jr, Dr Arthur Rhodes, Dr Howard Koh, Dr Kowichi Jimbow, Dr Martin Weinstock, Dr Richard Langley, Dr Arthur J. Sober, and Dr Hensin Tsao, among others.

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